Mark

METRO
Municipality of Metropolitan Seattle

Exchange Bldg. • 821 Second Ave., Seattle, Washington 98104

March 28, 1984

Mr. Wally Swafford
Seattle-King County
Health Department
400 Yesler Building
Mail Stop 15-L
Seattle, WA 98104

Dear Wally:

Metro intends to use the King County Airport as an area to apply sludge fertilizer from the Alki treatment plant. As in the past, the application will be performed using a 6,000 gallon tank trailer delivering sludge during daylight hours under the direction of the airport's security staff. Approximately two loads per week will be delivered during the summer beginning in May or as soon as a permit can be issued.

I am forwarding the permit application for your review. The application is incomplete; we are in the process of completing the chemical analysis of the sludge. The sample was taken in mid January and due to the workload in the lab we expect to have the complete results available in mid April. I will forward these to you as soon as they are available. We do know the quality will be better than that of West Point or Renton, so for your consideration I have included a copy of those sludge characteristics. Also a graphics breakdown of Metro's sludge is included as it compares to a forest soil.

The workplan, which you already have in your files, goes into more detail and background than described in the permit application. If you have any major concerns about this project please let me know as soon as possible.

Very truly yours,

Mark Lucas

Mark Lucas
Sludge Land Program

ML:mb
Enclosure
cc: Mr. Jack Frazelle, King County Airport
Ms. Judy Cochran, Metro
Mr. Dick Finger, Metro

KCSlip4 60495

SEA426794

PART III - Government Approval, Associate Legal Considerations, Etc.

1. Attach a copy or synopsis of:

   a. A document of title, i.e. deed, real estate contract, or deed of trust.
   b. Any leases
   c. Any easements

2. Please list any other governmental agency permits that are required for this operation (e.g. State DNR, King County BALD - unclassified use/grading permits). None Required

3. The Health Department has [X] /has not [ ] previously received a copy of your threshold determination or other evidence of SEPA compliance and therefore does [ ] /does not [X] require submittal of same.

Property Owner Sign Here _____ Date _____

Mark Lucas (Metro) _____ March 9, 1984
If preparer is other than the property owner, Date
n here and answer the following questions:

Do you have power of attorney for the property owner?

Yes _____ No X

Contact person regarding this application.

Name Don Smith (King County Airport Manager)

Address P.O. Box 80245
Seattle Wash. 98108

Phone 344-7390

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9. Submit a soil profile that is representative of the site and includes a U.S. Department of Agriculture Soil Conservation Service map. Also a brief description of the site geohydrology should be forwarded, showing ground water elevation(s), (seasonal fluctuations), direction of ground water flow, any perched acquifers, etc. See above workplan

9 Briefly describe your proposed surface water monitoring program. The parameters shall include testing for the indicator organisms of fecal coliform and fecal streptococci, as well as nitrates, COD, conductivity and other parameters as required by the Health Department. Also a description of all streams and water bodies located on or near the site must be included showing size, flow, uses, and water quality.

There are no streams or water bodies located on or near the site.

10. Briefly describe your proposed ground water monitoring plan. The parameters required in the surface water monitoring program (8) should also be included in the ground water quality check. This area is served by the Seattle Water Dept. and no domestic wells are in the area. Ground water flows into Puget Sound via the Duwamish Waterway

11. Briefly describe the method of transportation and application of sludge. Include type of equipment to be utilized, application rates, and post application field work.

The sludge will be transported in a 6000 gal. semi-tank trailer. The same truck and trailer will spread the material via a splash plate mounted on the rear of the tank.

12. Briefly describe the access route from the sludge source to the land application site. Include load limits, bridges, road type and whether seasonal restrictions will apply. Include access controls to the site, fencing, gates, and signs.

The sludge will be transported from Alki via roads currently used to haul the material. Access to the site will be coordinated Through the King County Police stationed at the airport

(over)

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2. Attach a copy of a topography map of the site (a scale range of 1" = 100' - 1000' is acceptable), plotting the following as they occur within a mile radius of the proposed site. The contour interval and scale for mapping must be approved by the Health Department prior to submittal:

a. Wells (domestic and agricultured)
b. Springs (include direction of flow)
c. Swamps
d. Streams (include direction of flow)
e. Any standing water
f. Water lines
g. Gas lines
h. Property lines
i. Drainage ditches (include direction of flow)
j. Access roads
k. Easements
l. Under drain systems (include direction of flow)
m. Structures
n. Proposed facilities (buildings, lagoons, etc.)
o. Proposed application areas and buffer zones
p. Proposed monitoring stations

3. Describe the type of sludge to be applied (i.e. municipal, industrial). Include a description of the basic process involved in the origin of the sludge and a description of pre-treatment and/or the sludge stabilization process. Include all chemicals utilized in the treatment process.

Municipal sludge originates with primary treatment at Alki. The raw sludge is digested under anerobic conditions for approximately 20 days at 90° F. This stabilization process is classified as a "method to significantly reduce Pathogens" by EPA (40 CFR 257) The sludge

Attach a copy of the most recent (within the past twelve months) chemical analysis of a sludge sample that suitably represents the volume proposed for land application. The analysis should include the following parameters:

pH	Sulfates	Cadmium
Total Solids	Potassium	Chronium VI
Total Volatile Solids	Magnesium	Lead
Total Nitrogen (Kjeldahl)	Copper	Mercury
NO_3-N (Filtered)	Zinc	Selenium
NH_3-N (Un-Filtered)	Iron	Silver
Total Phosphate	Nickle	Halogenated Hydrocarbons
Total and Fecal Coliform	Manganese	Polycyclic Aromatic Hydrocarbons
Total Fecal Strep	Arsenic	
TOC	Barium	PCB's

NOTE: In certain cases, some of these tests may be waived upon written request; Also, additional tests may be required.

5. Briefly describe the recent (over the past 5 years) history of the proposed site in terms of silvaculture, crop usage, pasture, etc. and anticipated future use of the site. The site is restricted to no public access without permission from the airport. The areas to be applied are the grass areas between the runways. These grass areas are used to hold the dirt in place so that the jet engines do not cause erogion to occur.

6. Estimate the total annual volume in tons per year of sludge to be applied at the proposed site.

120 to 200 dry tons depending upon weather conditions

7. Submit a chemical analysis of a representative soil sample from the proposed site. The analysis shall include the following: pH, % organic matter, cation-anion exchange potential, total phosphorous, calcium, magnesium, potassium, copper, zinc, iron, cadmium, and nitrates. Other testing may be required on a case-by-case basis.

See Original metro work plan prepared for project

LAND UTILIZATION OF SLUDGE PERMIT APPLICATION

SEATTLE-KING COUNTY
DEPARTMENT OF PUBLIC HEALTH
Environmental Health Division

Please complete this form and return it with the non-refundable permit application fee of $150, plus $10 for each acre (proposed for sludge application), with the total not to exceed $500 to: Seattle-King County Department of Public Health, Attention: Licenses & Permits Section, 400 Yesler Bldg., 7th Floor, MS-15L, Seattle, WA 98104. In addition, following approval of the permit application, an annual site permit will be issued which has an accompanying fee of $100.

If you have any questions regarding this form or would like additional information, please contact the Solid Waste Program Staff at 625-2125.

PART I - General Information

A. APPLICATION SITE

Name: King County Airport

Address or *Legal: P.O. Box 80245
Seattle Wash. 98108

Owner: King County

Address:

Phone: 344-7380

B. GENERATOR OF SLUDGE

Name: Metro (Alki treatment Plant)

Address: 821 2nd Ave.
Seattle Wash.

Contact Person: Mark Lucas

Phone: 447-4090

*Note Please attach a "vicinity map" if legal description is used.

C. If site ownership consists of a partnership, corporation, association, or other entity, please list the names and addresses of the partners, co-partners, Board of Directors, or governing body, or if the land is leased, the lessee (indicate NA if not applicable):

N.A.

D. If the sludge is to be transported and/or applied to the land by a company other than the Generator, please provide the name, address and phone (otherwise, indicate "same as generator"):

Bayside Disposal Co.
7201 W. Marginal Way SW.
Seattle Wash.
Bill Snyder 762-3004

The 6000 gal. tank trailer is owned by Metro

PART II - Characteristics

NOTE: If any of the following required information is included in an accepted work plan, DS/NS, or other document, it is acceptable to reference the location and attach a copy to minimize unnecessary duplication.

1. Use of adjacent property within a quarter mile (check appropriate box):

	NORTH	SOUTH	WEST	EAST
a. Residential				X
b. Commercial	X	X		X
c. Light Industrial	X	X		
d. Heavy Industrial			X	
e. Agricultural				
f. Mixed				
g. Other				

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Table 2-3. Existing Sludge Physical, Chemical, and Microbial Quality
(Mean Values, May 1981 - May 1982)

	West Point		Renton	
	Raw Primary	Digested, Dewatered	Raw Primary	Raw Waste Activated
Flow - metric tons (dry wt.) per day	72.2	36.5	23.8	16.1
Total solids (percent of wet wt.)	5.7%	18.4%	1.05%	0.33%
pH	5.3	7.4	6.4	7.1
Nutrients (percent of dry wt.)				
Organic - N	4.5%	3.4%	4.10%	8.26%
Ammonium - N	0.28%	0.9%	0.25%	0.51%
Total - P	1.06%	1.5%	1.12%	2.86%
Total - K	0.18%	0.15%	0.48%	0.90%
Trace metals (mg/kg)				
Arsenic	6.7	14.0	4.4	6.4
Cadmium	25.0	46.0	10.2	19.4
Chromium	240.0	390.0	154.0	287.0
Copper	730.0	1,160.0	420.0	997.0
Lead	420.0	720.0	185.0	280.0
Mercury	3.3	6.2	2.8	3.1
Nickel	110.0	155.0	56.0	91.0
Zinc	1,080.0	1,780.0	666.0	644.0
Trace organics (mg/kg)				
PCBs	1.4	1.6	0.6	0.5
Chlordane	ND*	ND*	ND*	ND*
Dieldrin	ND*	ND*	ND*	ND*
DDT	ND*	ND*	ND*	ND*
Aldrin	ND*	ND*	ND*	ND*
Endrin	ND*	ND*	ND*	ND*
Lindane	ND*	ND*	ND*	ND*
Methoxychlor	ND*	ND*	ND*	ND*
Toxaphene	ND*	ND*	ND*	ND*
2,4-D	ND*	ND*	ND*	ND*
2,4,5-TP (Silvex)	ND*	ND*	ND*	ND*
Bacteria (geometric mean; n = 12-16)				
Total coliform (mpn/100g wet)	.38E10**	.23E9	.19E10	.30E9
Fecal coliform (mpn/100g wet)	.16E9	.20E8	.13E9	.24E8
Fecal streptococcus (mpn/100g wet)	.58E8	.33E8	.22E8	.76E7
Salmonella (mpn/100g wet)	.33E3	.95E2	.65E2	.60E2
Shigella (mpn/100g wet)	<.3E2	<.3E2	<.3E2	<.3E2
Yersinia (mpn/100g wet)	.20E4	.15E4	.58E3	.36E3
Virus (geometric mean; n = 11)				
Total virus (pfu/100g wet)	100.0	8.0	101.0	30.0
Parasites (no. of positive identifications)				
Giardia	1/16 samples	1/16 samples	2/10 samples	1/10 samples
Coccidia	2/16 samples	4/16 samples	1/10 samples	0/10 samples
Ascaris	0/16 samples	3/16 samples	0/10 samples	0/10 samples

SOURCE: Metro 1983a.

* Not detectable
**E = Exponential base 10.

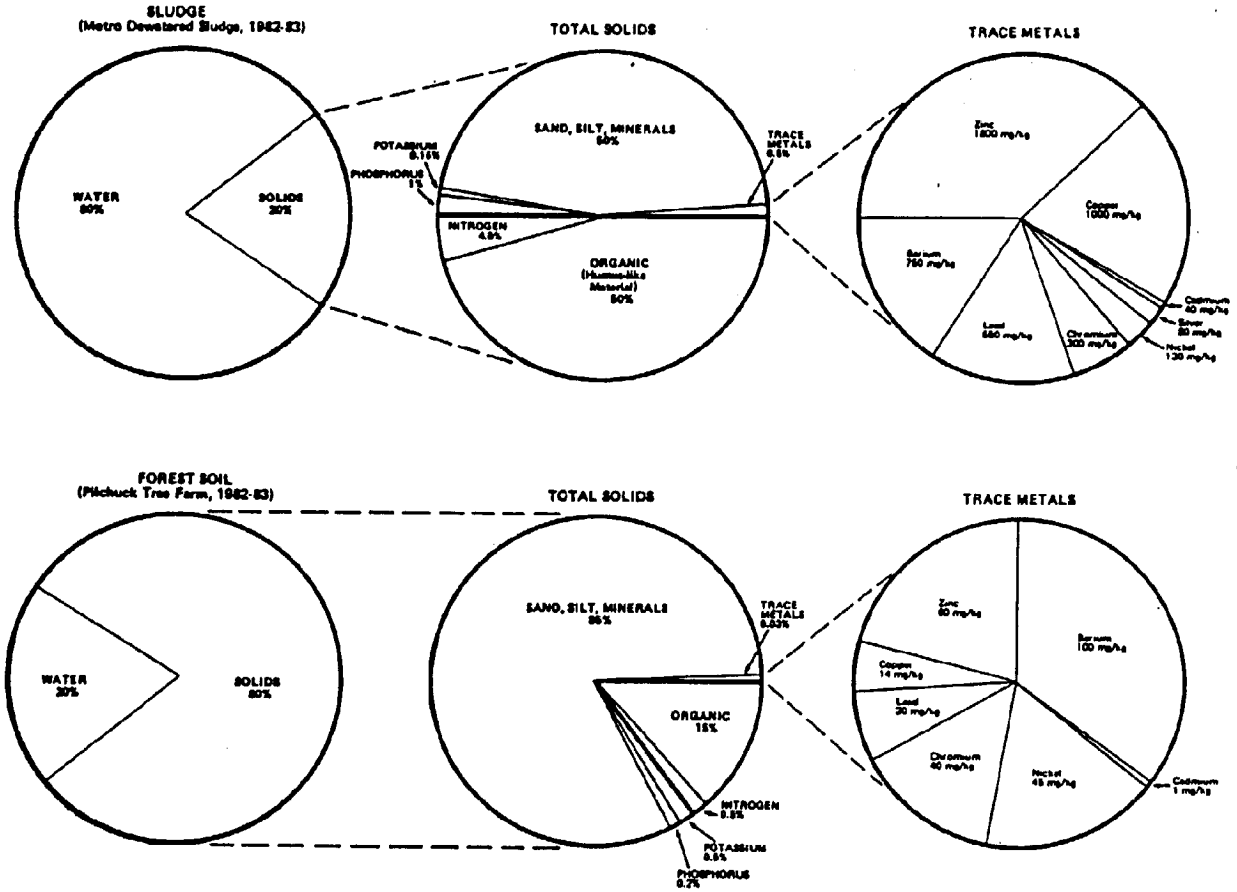

FIGURE 4
SLUDGE CHARACTERISTICS COMPARED TO A TYPICAL FOREST SOIL FROM NORTH SNOHOMISH COUNTY